Claims

What is claimed is:

1. In a cylindrical underwater acoustic projector having a longitudinal slot and comprising an outer shell and an inner concentric insulative layer, wherein the improvement comprises a metallic liner located between the outer shell and insulative layer.

2. The projector defined in claim 1 wherein the metallic liner is selected from the group consisting of aluminum, steel, titanium, and brass.

3. The projector defined in claim 1 wherein a second insulative layer is located between the outer shell and metallic liner.

4. The projector defined in claim 3 wherein the metallic liner is tapered and increases in radial thickness toward a location diametrically opposite the longitudinal slot.

5. The projector defined in claim 1 wherein an acoustic driver is mounted within the shell and extends along at least a portion of the I.D. of the metallic liner and is separated therefrom by the inner concentric insulative layer.

6. The projector defined in claim 5 wherein an arcuate section of a dielectric material extends longitudinally along a portion of the I.D. of the metallic liner adjacent each side of the slot.

7. The projector defined in claim 1 wherein the outer shell is formed of wound resin impregnated graphite strips, certain of said strips being wound at approximately 90° to a longitudinal axis of the shell and other of said strips being wound at an angle of between 45° and 85° to said longitudinal axis.

8. The projector defined in claim 7 wherein said other of said strips are wound at an angle of approximately ± 70° to the longitudinal axis.

9. The projector defined in claim 7 wherein the outer shell is formed of a plurality of resin impregnated graphite strips wound in overlapping relationship, said strips include inner and outer layers wound at approximately 90° to a longitudinal axis of the shell, and a plurality of intermediate layers wound at between 45° and 85° to said longitudinal axis.

10. The projector defined in claim 9 wherein the intermediate strips alternate at ± approximately 70° to the longitudinal axis.

11. An acoustic projector comprising

an outer cylindrical shell having an I.D.;

a metallic liner concentrically mounted within the shell and extending along a portion of the I.D. of the outer shell to provide structural reinforcement thereto:

a driver mounted within the metallic liner; and

insulation separating the driver from the metallic liner.

12. The acoustic projector defined in claim 11 including aligned longitudinal slots found in the outer shell and metallic liner.

13. The acoustic projector defined in claim 11 including a pair of arcuate segments extending from opposite sides of the longitudinal slots within the outer shell and in edge abutment with the driver to assist in retaining the driver within the shell.

14. The acoustic projector defined in claim 11 wherein the outer shell is formed of wound resin impregnated graphite strips, certain of said strips being wound at approximately 90° to a longitudinal axis of the shell and other of said strips being wound at an angle of between 45° and 85° to said longitudinal axis.

15. The acoustic projector defined in claim 14 wherein said other of said strips are wound at an angle of approximately ± 70° to the longitudinal axis.

16. The acoustic projector defined in claim 14 wherein the outer shell is formed of a plurality of resin impregnated graphite strips wound in overlapping relationship, said strips include inner and outer layers wound at approximately 90° to a longitudinal axis of the shell, and a plurality of intermediate layers wound at between 45° and 85° ± to said longitudinal axis.

17. The acoustic projector defined in claim 16 wherein the intermediate strips alternate at ± approximately 70° to the longitudinal axis.

18. An acoustic projector comprising:

an outer shell;

a driver mounted within the shell;

said outer shell including a plurality of wound resin impregnated graphite strips, certain of said strips being wound at approximately 90° to a longitudinal axis of the shell and other of said strips being wound at an angle of between 45° and 85° to said longitudinal axis.

19. The acoustic projector defined in claim 18 wherein said other of said strips are wound at an angle of approximately 70° to the longitudinal axis.

20. The acoustic projector defined in claim 18 wherein the outer shell is formed of a plurality of resin impregnated graphite strips wound in overlapping relationship, said strips include inner and outer layers wound at approximately 90° to a longitudinal axis of the shell, and a plurality of intermediate layers alternately wound at between 45° and 85° to said longitudinal axis.